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World Survey of Civil Aviation

SOUTHWEST ASIA

U. S. DEPARTMENT OF COMMERCE
BUSINESS AND DEFENSE SERVICES ADMINISTRATION

WORLD SURVEY OF CIVIL AVIATION

SOUTHWEST ASIA

1961

U. S. DEPARTMENT OF COMMERCE
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BUSINESS AND DEFENSE SERVICES ADMINISTRATION
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Foreword

This is the third in a series of foreign market surveys of civil aircraft and aeronautical products throughout the world. The first covered Japan and the second Africa. The series discusses aircraft fleet composition and commercial and general flight operations. Special emphasis is given to market potential, trade and investment opportunities, and competitive factors affecting sales of U. S. aircraft and aeronautical products.

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Southwest Asia: An Overall View

Afghanistan, Ceylon, India, Nepal, and Pakistan, which comprise Southwest Asia, have a total area of about 1.9 million square miles and an estimated population of 486 million. The topography varies from barren desert to the world's highest mountains. The area is underdeveloped, only India having more than the most rudimentary industry. The respective Governments are attempting to stimulate industrial development through economic planning and public-private investment. However, they are hampered by a scarcity of resources and capital, and lack of trained labor.

India is the most important country of the group, having 66 percent of the area, 78 percent of the population, and the greatest potential for economic growth.

THE ROLE OF AVIATION IN SOUTHWEST ASIA'S FUTURE

Air service is of vital importance in Southwest Asia. It provides transportation across large areas of terrain so rugged that surface systems could be developed only at great expense. Air facilities link East and West Pakistan and provide rapid transportation between the widely separated population centers of India.

The Governments of Southwest Asia are seeking to expand their air transport systems. All scheduled domestic airlines are Government owned and subsidized. General aviation activity is increasing and should grow in size and importance as the economies expand.

The only aeronatuical manufacturing industry in Southwest Asia is in India. Production includes aircraft, engines, and parts. India intends to develop this industry further, thereby creating competition for foreign aircraft.

AIRCRAFT IN USE

A total of 708 aircraft are registered in Southwest Asia. Of these, 159 are transports used by the airlines, all but 2 being multiengine. The remaining 549 aircraft are mostly single-engine utility craft used in general aviation.

MARKET POTENTIAL

The strenuous efforts being made by the Governments of Southwest Asia to obtain capital for airline expansion indicate

a good potential market for aircraft. The size of this market will of course depend upon available financing.

Exports from the United States to Southwest Asia in 1958-60 totaled $12 million worth of aircraft and $2 million worth of parts and accessories. The airlines plan to import in 1961 at least 1 or 2 Boeing 707's, 5 Fokker F-27's, and a DC-6B.

Prospects for the sale of long-range, piston-powered aircraft to Southwest Asia are not good. Airlines have expressed a desire to acquire turbine rather than piston-powered aircraft, and the need for the long-range, surplus types is not great.

An aircraft to replace the DC-3 should find a good market, inasmuch as many DC-3's will need to be disposed of in the next few years. As the countries develop, demand for executive-type aircraft for use by business and government should increase. The use of agricultural aircraft should also increase, as the techniques of crop dusting are introduced in the area.

In selling aircraft, manufacturers should bear in mind the importance to the purchaser of availability and continuing supply of spare parts, inasmuch as local production is not well developed. The political climate in the various countries is also an important consideration because aviation is under Government control.

United States aircraft have a good reputation in Southwest Asia, and they account for more than half of the total registration. However, future sales will depend primarily on the availability of capital and financing arrangements.

Afghanistan

The Kingdom of Afghanistan has an area of 250,000 square miles, slightly less than the size of Texas, and a population estimated at 12 million. The terrain is rugged, characterized by high mountains and barren desert. Temperatures vary widely during the year, and rainfall is scarce. The economy is predominatly nomadic herding, and the chief export is fur skins.

ROLE OF AIR TRANSPORTATION

Owing to the absence of railroads and the inadequacy of the road system, air transportation has become very important in Afghanistan for the hauling of both freight and passengers. The country needs a better transportation system to help develop its economy, but is unable to pay for it. The Government has attempted to solve this problem by seeking foreign aid. The United States has provided considerable technical and financial aid for the national airline, as well as for improvement of the airfields and air navigation facilities. The airfield at Kandahar is being developed with U. S. funds as the main international airport in

Afghanistan. The U.S.S.R., also a source of assistance to civil aviation, has paved the airport at Kabul. However, the remaining six airfields are unpaved, and the size and weight of aircraft using them is restricted.

Civil aviation is regulated by the Afghanistan Air Authority.

AIRCRAFT IN USE

Eight civil aircraft are in use in Afghanistan. All are of U. S. manufacture. One is used for instruction, and the rest are transports used by the airline.

COMMERCIAL AIRLINES

Service

Ariana Afghan Airline Company, Ltd. (Ariana), the only domestic airline in Afghanistan, is owned 51 percent by the Royal Government of Afghanistan and 49 percent by Pan American Airways (PAA). PAA has a contract with the U. S. International Cooperation Administration (ICA) whereby it assists in the operation of Ariana. The airline provides domestic service in Afghanistan and international service through the Near East to Western Europe. It has 7 aircraft--4 DC-3's, 2 DC-4's, and a DC-6B. Ariana has a large amount of seasonal freight and passenger traffic and makes many nonscheduled flights during the periods of these seasonal peaks.

Maintenance facilities in Afghanistan are inadequate, and the airline contracts with Hindustan Aircraft, Ltd., in India, and other companies for major maintenance and overhaul work.

The foreign flag airlines serving Afghanistan are India Airline Corp., Pakistan International Airline, Iranian Airline, and Aeroflot. Aeroflot provides a Moscow-to-Kabul service under a bilateral air agreement between the U.S.S.R. and Afghanistan. Ariana provides no Kabul-Moscow service because it does not yet have the equipment or crews for this run.

Disposal and Reequipment Programs

The airline reportedly plans to acquire an additional DC-6, and negotiations are underway for the financing of additional, modern aircraft and sale of the older aircraft.

GENERAL AVIATION

General aviation is not encouraged by the Afghan Air Authority. The only aircraft in general aviation is a Piper Pa-20 used by the United States Technical Aid Mission.

MARKET POTENTIAL

The market in Afghanistan for U. S. aircraft is not large. The country needs air transportation for both freight and passengers, but its economy, based on nomadic herding, cannot support the purchase of aircraft. Therefore, any procurement of the modern aircraft needed will depend upon foreign financing. Under present arrangements with PAA, co-owner and technical advisor of Ariana, any aircraft acquired by Ariana would be of U. S. manufacture. Import licenses are not required, but a 20-percent ad valorem import tax is imposed on aircraft and parts.

Afghanistan Civil Air Fleet—8

Ariana Airlines, total		7
Douglas DC-3	4	
Douglas DC-4	2	
Douglas DC-6	1	
General aviation:		
Piper PA-20		1

Ceylon

The island of Ceylon, a self-governing member of the British Commonwealth, has an area of about 25,000 square miles, or slightly more than West Virginia. The topography is varied; hills and mountains in the south central portion of the island are surrounded by lowlands and coastal plains. The population is about 8.5 million, and the economy is primarily agricultural. The climate is hot and humid, and annual rainfall amounts to approximately 80 inches.

ROLE OF AIR TRANSPORTATION

Air transportation is not a large industry in Ceylon. Though surface transportation is not well developed and better facilities are needed, the economy is not able to afford extensive air services. Air Ceylon, Ltd., is the only airline in operation, and there is no business flying. The Government has attempted to promote aviation, and the Department of Civil Aviation operates a flying school and also regulates civil aviation and administers the country's 8 airfields. Recently Ceylon obtained a loan from the U. S. Development Loan Fund to expand the airport at Katunayaka, 24 miles north of Colombo, to accommodate large, modern aircraft.

Ceylon has no aeronautical manufacturing industry. All aircraft and parts are imported. Maintenance facilities for the

Government aircraft and the 3 DC-3's of Air Ceylon, Ltd., are available at the airport at Ratmatana. Overhaul of the airline's larger aircraft is carried out at Schiphol Airport in Amsterdam, the Netherlands.

AIRCRAFT IN USE

A total of 15 aircraft are registered in Ceylon, 6 of which are of U. S. manufacture. Air Ceylon, Ltd., owns 4, and the other 11 are owned by various government departments. One of Air Ceylon's fleet, a Lockheed Super Constellation, may not be active because it has been replaced in international service by a Lockheed Electra leased from KLM Royal Dutch Airlines.

COMMERCIAL AIRLINES

Services

Air Ceylon, Ltd., the only national flag airline in Ceylon, provides domestic service and service to scuthern India, using 3 DC-3's, and an international service between Amsterdam, London, Colombo, and Singapore, using a larger aircraft. The airline is owned 51 percent by the Government of Ceylon and 49 percent by KLM Royal Dutch Airlines. KLM assists the airline by providing technical advice and training, as well as personnel and equipment used on the international flight.

Ceylon has been negotiating with Communist China concerning a proposed Colombo-to-Canton air route, but no agreement had been reported as of November 1960.

The Government has adopted an open-door policy toward foreign flag airlines wishing to land in Ceylon. The following airlines operate through Ceylon on international routes:

British Overseas Airways Corp.
Qantas Empire Airways
Trans World Airlines
KLM Royal Dutch Airlines
Indian Airlines Corp.

Disposal and Reequipment Programs

No firm plans have been made for replacing or expanding the fleet in domestic service. Various proposals for the replacement of the DC-3 aircraft owned by the airline and the older aircraft owned by the air school have not been carried out on account of lack of capital. The Super Constellation in international service was recently replaced by a Lockheed Electra leased from KLM, and further expansion of international service will probably be made through the same leasing arrangement. Ceylon had been attempting to obtain turboprop aircraft for some time. In September 1960 the U.S.S.R. offered IL-18 aircraft for sale on easy payments terms, but as of November 1960 the offer had not been accepted.

GENERAL AVIATION

Of the 11 aircraft in use in general aviation, 2 are of U. S. manufacture. The civil government uses 2 aircraft--one for crop dusting and the other for aerial surveying. The other 9 belong to the Government owned and operated Ceylon Air Academy, which offers flying instructions and occasionally makes charter flights.

MARKET POTENTIAL

The market for long-range, piston aircraft is limited. The country is small, and airport facilities are inadequate. The domestic air service needs replacements for the 3 DC-3 aircraft now operating and the addition of smaller passenger aircraft. A small market for light utility aircraft may develop if the country's economy expands. The airline would like to have turbine-powered aircraft for its international service. Airline officials have indicated their preference for U. S. aircraft, and have attempted to purchase 2 Lockheed Electras. The purchase was not consummated because of a lack of capital. Favorable financing is an important factor in selling to Ceylon, and the easy payment terms in the Soviet offer of IL-18 aircraft are reportedly the chief inducement for this purchase.

Imports from the United States are restricted by an import licensing system, whereby foreign exchange is rationed and preference given to essential imports. In the past, licenses have been granted freely when the balance of payments was favorable, and restricted as it declined. Ceylon is a member of the sterling bloc, and therefore the controls favor imports from the Commonwealth. Imports of aircraft and aircraft parts are not subject to import duties or tariffs.

Ceylon Civil Air Fleet—15

Air Ceylon, Ltd., total, as of February 1960		4
Douglas DC-3	3	
Lockheed Super Constellation	1	
General aviation, total, as of November 1959		11
Ceylon Air Academy:		
De Havilland Chipmunk	2	
De Havilland DH-82A	2	
Aero 45	1	
Sokol MD	1	
Auster MK V	1	
Auster 51	1	
Hiller UH 12B helicopter	1	
Civil government:		
Czecho Brigadyr L-60	1	
Beechcraft D-18 S	1	

India

The Republic of India has an area of over 1.2 million square miles, about one-third the size of the United States, and a population of more than 380 million. The northern part of the country is mountainous, and the southern part is characterized by plains and high temperatures. Heavy rainfall covers much of the country from June to September.

ROLE OF AIR TRANSPORTATION

The Government has complete control over civil aviation. It owns and operates the 2 civil airlines and the 85 civil airfields, and it regulates the nonscheduled airlines and private flying. Civil aviation is regulated by the Director General of Civil Aviation, under the Ministry of Transport.

The long distances between major population centers and the poor surface transportation facilities have brought about a growing demand for air services. The scheduled airlines carried more than 720,000 passengers in 1959, a sevenfold increase over the 1946 rate, and their ton-mile capacity increased from 8.5 to 121 million in the 13-year period. More than 500 aircraft are registered in the country and most of these, excluding the scheduled airline fleets, are small passenger aircraft.

In addition to the 2 Government-owned airlines, India is served by 17 international, foreign flag airlines. The Indian Government has signed 18 bilateral agreements with foreign countries concerning international airline operations.

THE AIRCRAFT MANUFACTURING INDUSTRY

Hindustan Aircraft, Ltd., the only important aircraft manufacturing company in India, is owned two-thirds by the Government of India and one-third by the Government of Mysore. The Indian Department of Defense is responsible for the company's operation. Both military and civilian aircraft have been produced, mostly under licensing agreements with English firms. The Vampire jet fighter has been produced under license from DeHavilland Aircraft Co., Ltd., and the Gnat jet fighter has gone into production under license from the Folland Aircraft Co.

Hindustan Aircraft designed and produced a basic trainer aircraft, the HT-2, which has been used by the Indian Air Force and civilian flying clubs; in the light plane field, it has recently designed and produced a 2-place, Piper Cub type of aircraft called the Pushpak and a larger, 4-place, high-wing monoplane called the Krishak, which is suitable for conversion to crop dusting. The firm is also producing the Avro 748 under license from Hawker Siddeley Aviation, Ltd. This plane will be used by the Indian Air Force and the civilian airlines as a replacement for the DC-3. The engine for the Avro, the Dart RD-7

turboprop, will be built in India under license from Rolls Royce, Ltd.

Afco, Ltd., of Bombay, a boatbuilding firm, has designed and produced a single, small, 2-place monoplane. However, the Indian Government reportedly has not yet licensed the craft for use.

Only a few aircraft components are produced outside Hindustan Aircraft. A few relatively small and newly established firms are manufacturing radio and other electronic equipment, and Dunlop Rubber Co. (India), Ltd., has undertaken the production of aircraft tires.

No commercial helicopters are being produced in India. The Indian Air Force purchased a Russian M-4 helicopter from the U.S.S.R. in 1960 and may import more. However U. S.-made helicopters apparently are also acceptable. In December 1960 India reportedly had agreed to purchase 6 or 7 Bell 47 G-3 helicopters.

India will probably continue to import aircraft and parts. The domestic aircraft production capacity is growing, but it will be some time before the country is entirely self-sufficient.

Import restrictions are imposed on aircraft and parts. Because of the shortage of foreign exchange, import licenses are granted only to actual users, approved wholesalers, and distributors on an "ad hoc" basis. Imports of aircraft for resale are prohibited.

AIRCRAFT IN USE

As of mid-1959, 553 aircraft were registered in India, of which about 329, or 60 percent, were U. S. built. The 2 scheduled airlines employed 104 aircraft, and government, business, nonscheduled airlines, flying clubs, and private individuals accounted for the other 449.

COMMERCIAL AIRLINE OPERATIONS

Service

The two Government owned and operated airlines are Air India International (AII), operating internationally, and Indian Airlines Corporation (IAC), operating all scheduled domestic service.

AII has 3 Boeing 707's, 9 Super Constellations, and 1 DC-3 aircraft, and provides service to New York, Western Europe, Tokyo, Southeast Asia, Aden, and Nairobi.

IAC operates a fleet of 55 DC-3's, 12 Vikings, 10 Viscounts, 7 Herons, 5 Skymasters, and 2 single-engine aircraft, servicing the 85 civil airfields throughout India. Madras, Bombay, Calcutta, and Delhi are linked by the main trunk routes.

Disposal and Reequipment Programs

AII has ordered a fourth Boeing 707, for delivery in April 1961. Two Super Constellations have been converted to cargo carriers and began to serve a Bombay-to-London route in November 1960.

IAC plans to replace its fleet of DC-3's with Avro 748 aircraft built in India, the first of which is scheduled to be flown in early 1961. It will also acquire 5 Fokker F-27's from the Netherlands in early 1961. IAC is attempting to dispose of its Viking and Heron aircraft and presumably will try to dispose of its DC-3's as the Avros become available.

GENERAL AVIATION

The Central Government recognizes the importance of general aviation and is actively promoting its growth. In 1959, 16 subsidized flying clubs in various parts of the country provided recreational flying, charter service, and flying instruction. A civil aviation training center at Allahabad providing instruction in all phases of civil aviation, had 140 students as of November 1959. The flying clubs and private individuals own 205 aircraft, of which 139, or 72 percent, are U. S. makes; all except 8 Beechcraft D-18's are single-engine aircraft.

Nonscheduled airlines operate about 28 aircraft, of which 16 are U. S. makes. Except for 5 DC-3's and 1 Catalina, the aircraft are single-engine, utility types. The 227 aircraft used in business and government, which include 103 U. S. makes, comprise 44 multiengine, medium and light transports, 182 single-engine, utility aircraft, and 1 helicopter.

MARKET POTENTIAL

The market in India for U. S. surplus piston-engine aircraft is not large. IAC expects to replace its DC-3's with Avro 748 turboprops, the recently acquired 10 Viscounts, and the 5 F-27's on order. Airline officials believe their immediate needs will best be filled by these small to medium size turboprop aircraft rather than large piston aircraft.

AII is apparently not a large market for surplus piston aircraft. Its capacity has been increased by the introduction of 707 jets, and further expansion will probably incorporate modern turbine rather than piston aircraft of the types that are surplus in the United States.

Small transport and executive-type aircraft probably will continue to be in demand. Excluding the scheduled airlines, 85 percent of the aircraft registered in India are light, utility, and passenger types.

Financing will be a principal factor in the sale of aircraft in India. The country is engaged in an ambitious plan of industrial

expansion, and foreign capital is in short supply. Foreign capital is rationed by means of import licenses that must be obtained by firms before any commodity may be imported. Aircraft and parts are subject to a 3-percent ad valorem import duty. The Dutch were able to sell the 5 F-27's through a barter transaction. They agreed to accept manganese ore and other Indian products in exchange for the aircraft, thereby enabling India to conserve foreign capital.

Favorable financing arrangements are probably the most important factor in the purchase of aircraft from the U.S.S.R. The decision to purchase the Russian helicopter has been attributed mainly to the low cost of the craft and acceptance of payment in rupees. Similar favorable terms may well be behind the report that the U.S.S.R. has agreed to supply India with transport aircraft.

Indian Civil Air Fleet—553

Commercial airlines, total		104
Air India International:		
Boeing 707	3	
Lockheed Super Constellation	9	
Douglas DC-3	1	
Indian Airlines Corp.:		
Douglas DC-3	55	
Vickers Viking	12	
Vickers Viscount	10	
De Havilland Heron	7	
Douglas DC-4	5	
Convair L-5 Sentinel	2	
General aviation, total		449
Flying clubs and private ownerships, total		194
De Havilland DH-94	1	
De Havilland DH-82	25	
De Havilland DHC Chipmunk	9	
Taylor Young	1	
Beechcraft D-18	8	
Beechcraft Bonanza 35	11	
Convair L-5 Sentinel	63	
Piper Cub	25	
North American AT-6	4	
Waco	1	
Fairchild Argus	4	
Aeronca Chief	5	
Aeronca Sedan	1	
Auster	5	
Republic See Bee	1	
Convair Valiant BT-13	1	
Miles Gemini M-65	11	
Stinson 108	1	
Saab 91A	4	

Indian Civil Air Fleet—Con.

General aviation--Con.		
Ryan Navion	11	
Stinson Reliant	1	
Aero 45	1	
Nonscheduled and charter, total		28
De Havilland DH-89	2	
Douglas DC-3	5	
Piper Cub	3	
Convair L-5 Sentinel	1	
Noorduyn Norseman	6	
Percival Proctor	1	
Fairchild Argus	3	
De Havilland DH-83	2	
Ryan Navion	1	
North American AT-6	1	
Stinson 108-3	1	
De Havilland DH-82	1	
Convair Catalina	1	
Business and civil government, total		227
Airspeed consul	4	
Beechcraft Twin Bonanza 50-C	1	
De Havilland DH-85	1	
Beechcraft D-18-S	9	
Beechcraft 35	23	
De Havilland DH-82	18	
De Havilland DH-89A	3	
Convair L 5 Sentinel	14	
Noorduyn Norseman	2	
Douglas DC-3	17	
Fairchild Argus	7	
Percivel Proctor	1	
Piper Cub	5	
De Havilland Chipmunk	19	
Auster UJ-1	4	
Auster V	10	
Aeronca Super Chief	4	
Boeing Kaydet	1	
Ryan Navion	8	
Republic See Bee	3	
Cessna 140	1	
Aeronca Sedan	5	
Avro Anson	11	
Luscombe Silvaire	3	
De Havilland Dove	1	
Hindustan HT-2	20	
De Havilland Heron	1	
Hiller helicopter	1	
Piper Twin Apache	1	
De Havilland C-2 Beaver	2	
Hindustan Pushpak (Manufacturers' inventory)	27	

Nepal

The Kingdom of Nepal has an area of 54,000 square miles and a population of about 8.5 million. The country is mountainous except for a narrow strip along the southern edge, and it has a primitive agricultural economy.

ROLE OF AIR TRANSPORTATION

Air service--the only transportation means available--is a small but important industry. The Government-owned domestic airline provides domestic and international service. The only general flying is that done by the King in his personal aircraft.

Of the 8 airfields, only Gaucher Airport in Kathmandu, the capital, has a paved landing strip or any maintenance facilities. Because the country is poor, air transportation is being developed with foreign aid, primarily from the United States and to some extent from India.

AIRCRAFT IN USE

A total of 6 aircraft are in use, 5 DC-3's and 1 IL-14.

COMMERCIAL AIRLINES

Service

The Government-owned Royal Nepal Airline Corporation (RNA), formed in 1958 in response to demands for a national airline, provides internal service as well as flights to India. When RNA was organized, Indian Airlines Corporation withdrew the internal airline service it had been providing in Nepal but retained service between Nepal and India, and it remains the only foreign airline serving Nepal. RNA has 4 Douglas DC-3 aircraft, 1 purchased from India and the others received as gifts from the United States. Each week the airline flies 27 scheduled internal flights and 7 scheduled flights to India.

Disposal and Reequipment Programs

The airline has no known expansion or disposal programs.

GENERAL AVIATION

An IL-14 and a DC-3, given to the King by the U.S.S.R. and the United States, respectively, are the only aircraft in general aviation, and they are operated by the Royal Palace.

MARKET POTENTIAL

Prospects are slight for selling long-range, piston-powered aircraft of the types that are surplus in the United States. The

flights by RNA are relatively short, and the airfields cannot accommodate large aircraft. The market for smaller aircraft seems more promising. The secondhand DC-3's now used by the airline will eventually need to be replaced, and demands for increased airline service and more craft should grow as the economy grows. Any new aircraft acquired by RNA will need to be dependable, rugged, and capable of operating from short, unimproved airstrips. The potential market for such aircraft is estimated at 2 a year through 1964.

The principal barrier to acquiring more aircraft is financial. Until the economy grows, it will be dependent upon outside aid to supply capital to the airline. The United States has provided aid to the airline in the past and will probably continue to do so.

Business and private aircraft are not in demand.

Nepal has no formal rules concerning importation of aircraft, but inasmuch as any aircraft imported would be used directly or indirectly by the Government, no obstacles are foreseen.

Nepal Civil Air Fleet—6

Royal Nepal Airlines:	
Douglas DC-3	4
General aviation--Royal Palace:	
Douglas DC-3	1
Ilyushin IL-14	1

Pakistan

The Republic of Pakistan has a total area of 365,000 square miles. East Pakistan contains 55,000 square miles and West Pakistan 310,000 square miles. The total population of 77 million is divided almost equally between East and West Pakistan. East Pakistan has many low-lying valleys and heavy rainfall from June to August. West Pakistan has the Valley of the Indus in the east, which changes to rugged mountains in the west and north, and the climate is arid. Though the economy of both areas is primarily agricultural, the Government is making strenuous efforts to increase industry and raise the national income level.

ROLE OF AIR TRANSPORTATION

Though not a large industry, air transportation is of unique importance to Pakistan. The two main centers of Government, Dacca and Karachi, are more than 1,200 miles apart, and rapid transportation between them is necessary to enable efficient government operation. Air transportation is also important

within each section of the country, often providing the only rapid means of transportation to many remote areas because of the poor surface facilities.

The Government of Pakistan has recognized the importance of civil aviation and has actively supported it. The single domestic airline is owned and subsidized by the Government, and six flying clubs that provide flying instruction and promote interest in civil aviation are also subsidized. Aid has been sought and obtained from the United States in the construction of air navigation and airport facilities.

Karachi International Airport is the main gateway for air transportation between Europe and the Near East on one hand and South and Southeast Asia on the other. The airport, which is used by 19 international airlines, is being improved, with U. S. aid, to accommodate long-range jets.

Civil aviation is regulated by the Department of Civil Aviation within the Pakistan Air Force.

AIRCRAFT IN USE

Of the 126 aircraft registered in Pakistan at the beginning of 1960, 43 were of U. S. manufacture. The commercial airlines had 20 registered craft, of which 15 were U. S. makes, and the flying clubs had 53 aircraft, including 4 U. S. makes. Only 5 aircraft were registered as individually owned, and 2 of these were made in the United States. All but 1 of the 13 aircraft owned by business, and 10 of the 35 owned by the civil government were of U. S. manufacture.

COMMERCIAL AIRLINES

Service

The Government-owned Pakistan International Airlines (PIA), the only domestic airline in Pakistan, provides both domestic and international service. The United States assists in the operation of the airline by providing technical assistance, advice, and training through Pan American Airways under contract with ICA.

In addition to a subsidized internal service, PIA flies international routes west as far as London and east to Rangoon. The airline has an active fleet of 5 Super Constellations, 3 Viscounts, and 10 DC-3's, and it leases a Boeing 707 for a weekly London-Karachi service.

Disposal and Reequipment Programs

The country's Five Year Plan provides for the expansion of both international and domestic airline service, and for the acquisition of new aircraft. According to the plan, which began in July 1960, PIA will purchase the 707 now leased from Pan American World Airways and also 3 additional jets as replace-

ments for Super Constellations now used by PIA. Although the make and model of the 3 additional jets reportedly are undecided as yet, the Douglas DC-9, Boeing 720, and Convair 880 are being considered. A total of 9 Fokker F-27's are scheduled as replacements and supplements to the DC-3's owned by the airline.

GENERAL AVIATION

As of December 1959, 106 aircraft were registered in the category of general aviation, of which 13, all light passenger planes, were used by business firms. The civil government used 35 aircraft for various purposes, such as plant protection and personal transport. The 6 Government-subsidized flying clubs that provide flying instruction and promote general interest in aviation had a total of 53 aircraft, mostly De Havilland Moths and Auster aircraft formerly belonging to the Pakistan Air Force. Very little private flying is done, and only 4 aircraft are registered as individually owned.

MARKET POTENTIAL

The only possible use for a few, long-range, piston-powered aircraft would seem to be on the Karachi, West Pakistan, to Dacca, East Pakistan, run, which uses Super Constellations for nonstop service. However, the second Five Year Plan calls for the purchase of medium-range jets such as the Douglas DC-9, so possibly the desire for the prestige and speed of jet service has outweighed the advantage of the lower cost of surplus aircraft.

The need for short-range transport aircraft for internal flights is to be filled by the importation of 9 Fokker F-27 aircraft during the second Five Year Plan. Jet aircraft are being used in the longer international routes flown by PIA.

General aviation presents a limited market for smaller aircraft because the underdeveloped economy cannot afford them. However, a trade source has estimated that up to 10 light aircraft a year could be sold to business firms and the flying clubs if foreign exchange were available.

U. S. equipment is widely used in Pakistan and enjoys a good reputation. As in the case of many other underdeveloped countries, a shortage of foreign exchange hampers the importation of U. S. goods. Foreign exchange is rationed by a system of import licensing, preference being given to essential needs. The foreign exchange budget is reviewed and lists of licensable items published semiannually. Aircraft and parts are subject to a 3-percent ad valorem import duty.

Commercial airlines, total		20
Pakistan International Airlines:		
Douglas DC-3	10	
Vickers Viscount	5	
Lockheed Super Constellation	5	
General aviation, total		106
Flying clubs, total		53
Convair L-5 Sentinel	2	
De Havilland DH 82	24	
De Havilland DH 83	2	
De Havilland Chipmunk	1	
Auster V	13	
Auster Autocar	1	
Auster Aiglet	8	
Cessna 170	1	
Cessna 172	1	
Private service, total		5
De Havilland DH 83	1	
Noorduyn Norseman	2	
Convair L-5 Sentinel	2	
Business, total		13
Cessna 182	2	
Cessna 180	2	
Cessna 172	1	
Cessna 170	1	
Cessna 310	1	
Piper Tripacer	2	
Piper Apache	1	
Piper Super Cub	1	
Grumman Widgeon	1	
De Havilland Dove	1	
Government, total		35
De Havilland Tiger Moth	3	
De Havilland Beaver	10	
Auster Autocar	4	
Auster V	2	
Auster Aiglet	3	
Cessna 310 B	1	
Cessna 195 A	1	
Beechcraft Twin Bonanza	1	
Grumman Widgeon	2	
Piper Super Cub	3	
Piper Cub	2	
Avro XIX	1	
Short Sealand	2	

U. S. Exports of Aeronautical Products to Southwest Asia, 1958-60

(Value in dollars)

Description and country of destination	1958		1959		1960	
	Number	Value	Number	Value	Number	Value
Aircraft, and parts and accessories, total....	.....	9,036,499	.....	265,580	.....	3,193,976
Commercial and civilian aircraft, total.....	.....	9,008,086	.....	191,000	.....	3,093,009
3,000 pounds and over, empty airframe weight:						
Passenger transports, commercial, new, 3,000-14,999 pounds:						
India.....	.....	.....	.....	.....	2	205,305
Ceylon.....	2	264,312	.....	.....	.....	.....
Pakistan.....	.....	.....	1	100,000	1	149,005
Passenger transports, commercial, new, 30,000 pounds and over:						
India.....	2	4,217,800	.....	.....	3	1,473,199
Pakistan.....	2	4,473,632	.....	.....	.....	.....
Used and rebuilt, including converted, 3,000 pounds and over:						
India.....	.....	.....	.....	.....	1	89,000
Nepal.....	.....	.....	.....	.....	1	100,000
Afghanistan.....	.....	.....	.....	.....	1	835,000
Under 3,000 pounds, empty airframe weight:						
Utility, commercial, and civilian, new, 3 places and under:						
India.....	1	9,306	.....	.....	2	22,000
Pakistan.....	1	8,749	.....	.....	.....	.....

U. S. Exports of Aeronautical Products to Southwest Asia, 1958-60—Con.

(Value in dollars)

Description and country of destination	1958		1959		1960	
	Number	Value	Number	Value	Number	Value
Utility, commercial, and civilian, new, 4 places and over:						
Pakistan	2	34,287	3	91,000	3	123,000
Rotary wing, new, commercial:						
India	.....	.....	.....	.....	2	96,500
Parts and accessories, total	.....	28,413	.....	74,580	.....	100,967
Aircraft engines, reciprocating, new, air cooled, under 400 horsepower:						
India	1	2,701	27	30,196	20	26,450
Pakistan	9	22,535	8	41,039	4	18,435
Afghanistan	.....	.....	.....	.....	1	1,451
Aircraft engines, used and rebuilt:						
India	.....	.....	1	2,145	9	26,167
Ceylon	.....	.....	1	1,200	.....	.....
Pakistan	3	3,177	.....	.....	5	28,464
U. S. WORLD EXPORTS						
Aircraft, and parts and accessories, total	.....	971,541,000	.....	768,980,000	.....	1,329,343,000
Commercial and civilian aircraft, total	1,689	204,051,000	1,628	152,962,000	2,336	537,126,000

Parts and accessories, total.....	.....	767,670,000	.....	616,018,000	.....	792,217,000
Aircraft engines, reciprocating, new, air cooled, under 400 horsepower.....	1,552	4,312,000	948	2,448,000	1,464	3,715,000
Aircraft engines, reciprocating, used and rebuilt.....	1,761	7,850,000	1,250	4,846,000	1,558	10,392,000
Aircraft components, parts, and accessories, not elsewhere classified.....	.....	755,508,000	.....	608,724,000	.....	778,110,000

Source: Report No. FT 410, Part 2, U. S. Exports of Domestic and Foreign Merchandise, Bureau of the Census, U. S. Department of Commerce. World total figures from Current Industrial Reports--Complete Aircraft and Aircraft Engines, Bureau of the Census, U. S. Department of Commerce, and Federal Aviation Agency, January 1959 and December 1960.

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